L Numb r	Hits	S arch T xt	DB	Time stamp
15	3504	flavon id r lut lin r myri etin or apigenin r querc tin	USPAT; EPO; JPO; DERWENT	2002/08/29 14:28
16	38	(flavonoid r lute lin r myric tin or apigenin or quercetin) same diabetes	USPAT; EPO; JPO; DERWENT	2002/08/29 14:30
17	12	dihydrokaemferol or kaemferol	USPAT; EPO; JPO; DERWENT	2002/08/29 14:29
18	236	apigenin	USPAT; EPO; JPO; DERWENT	2002/08/29 14:29
19	243	(dihydrokaemferol or kaemferol) or apigenin	USPAT; EPO; JPO; DERWENT	2002/08/29 14:29
20	2	((dihydrokaemferol or kaemferol) or apigenin) same diabetes	USPAT; EPO; JPO; DERWENT	2002/08/29 14:29
21	8	(flavonoid or luteolin or myricetin or apigenin or quercetin) near8 diabetes	USPAT; EPO; JPO; DERWENT	2002/08/29 14:42
22	31	plant near4 treat$5 near6 diabetes	USPAT; EPO; JPO; DERWENT	2002/08/29 14:43
23	1	(dihydrokaemferol or kaemferol) near4 luteolin near5 apigenin	USPAT; EPO; JPO; DERWENT	2002/08/29 14:47
24	5	(dihydrokaemferol or kaemferol) same luteolin same apigenin	USPAT; EPO; JPO; DERWENT	2002/08/29 14:48

32	0	(brick llbush r chaparral r sag brush adj scrub) sam (insulin or glucos or hyperglyc m$5)	USPAT; EPO; JPO; DERWENT	2002/08/29 16:09
33	143	brick llbush r chaparral r sag brush adj scrub or brickellia adj calif rnica	USPAT; EPO; JPO; DERWENT	2002/08/29 16:10
34	2	(brickellbush or chaparral or sagebrush adj scrub or brickellia adj californica) same (diabet$4 or blood adj glucose)	USPAT; EPO; JPO; DERWENT	2002/08/29 16:10

```
$%^STN;HighlightOn=  ***;HighlightOff=***  ;


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TERMINAL (ENTER 1, 2, 3, OR ?):2


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 NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2  Apr 08  "Ask CAS" for self-help around the clock
 NEWS  3  Apr 09  BEILSTEIN: Reload and Implementation of a New Subject Area
 NEWS  4  Apr 09  ZDB will be removed from STN
 NEWS  5  Apr 19  US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
 NEWS  6  Apr 22  Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
 NEWS  7  Apr 22  BIOSIS Gene Names now available in TOXCENTER
 NEWS  8  Apr 22  Federal Research in Progress (FEDRIP) now available
 NEWS  9  Jun 03  New e-mail delivery for search results now available
 NEWS 10  Jun 10  MEDLINE Reload
 NEWS 11  Jun 10  PCTFULL has been reloaded
 NEWS 12  Jul 02  FOREGE no longer contains STANDARDS file segment
 NEWS 13  Jul 22  USAN to be reloaded July 28, 2002;
                  saved answer sets no longer valid
 NEWS 14  Jul 29  Enhanced polymer searching in REGISTRY
 NEWS 15  Jul 30  NETFIRST to be removed from STN
 NEWS 16  Aug 08  CANCERLIT reload
 NEWS 17  Aug 08  PHARMAMarketLetter(PHARMAML) - new on STN
 NEWS 18  Aug 08  NTIS has been reloaded and enhanced
 NEWS 19  Aug 09  JAPIO to be reloaded August 25, 2002
 NEWS 20  Aug 19  Aquatic Toxicity Information Retrieval (AQUIRE)
                  now available on STN
 NEWS 21  Aug 19  IFIPAT, IFICDB, and IFIUDB have been reloaded
 NEWS 22  Aug 19  The MEDLINE file segment of TOXCENTER has been reloaded
 NEWS 23  Aug 26  Sequence searching in REGISTRY enhanced

 NEWS EXPRESS  February 1 CURRENT WINDOWS VERSION IS V6.0d,
               CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
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FILE 'HOME' ENTERED AT 14:56:10 ON 29 AUG 2002

=> index bioscience

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21
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INDEX 'ADISALERTS, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
       BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
       CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
       DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...'
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63 FILES IN THE FILE LIST IN STNINDEX

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=> index bioscience napralert

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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
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       CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
       DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...'
ENTERED AT 14:56:50 ON 29 AUG 2002

64 FILES IN THE FILE LIST IN STNINDEX

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search error messages that display as 0* with SET DETAIL OFF.

=> s (kaemferol or dihydrokaemferol) (4a) apigenin (4a) luteolin (10a) extract?

  29 FILES SEARCHED...
  55 FILES SEARCHED...
           1    FILE USPATFULL

   1 FILES HAVE ONE OR MORE ANSWERS,    64 FILES SEARCHED IN STNINDEX

L1    QUE (KAEMFEROL OR DIHYDROKAEMFEROL) (4A) APIGENIN (4A) LUTEOLIN (10A) EXTR
          ACT?

=> s brickellia californica or b.californica

           2    FILE AGRICOLA
           4    FILE AQUASCI
          16    FILE BIOSIS
           4    FILE CABA
           7    FILE CAPLUS
  25 FILES SEARCHED...
           1    FILE ESBIOBASE
           1    FILE FROSTI
           2    FILE GENBANK
           1    FILE IFIPAT
           1    FILE LIFESCI
  44 FILES SEARCHED...
           4    FILE OCEAN
           5    FILE SCISEARCH
           1    FILE USPATFULL
           1    FILE WPIDS
           1    FILE WPINDEX
  63 FILES SEARCHED...

  15 FILES HAVE ONE OR MORE ANSWERS,    64 FILES SEARCHED IN STNINDEX

L2    QUE BRICKELLIA CALIFORNICA OR B.CALIFORNICA

=> s l2 (s) diabetes

  25 FILES SEARCHED...
          0*    FILE FEDRIP
           1    FILE FROSTI
  50 FILES SEARCHED...
```

```
          1   FILE USPATFULL
          1   FILE WPIDS
          1   FILE WPINDEX

   4 FILES HAVE ONE OR MORE ANSWERS,   64 FILES SEARCHED IN STNINDEX

L3   QUE L2 (S) DIABETES

=> s brickellbush or chaparral or sagebrush adj scrub

          5   FILE ADISNEWS
        567   FILE AGRICOLA
         12   FILE AQUASCI
         18   FILE BIOBUSINESS
        717   FILE BIOSIS
         14   FILE BIOTECHNO
        621   FILE CABA
          3   FILE CANCERLIT
        126   FILE CAPLUS
          3   FILE CEN
        370   FILE CIN
         74   FILE CONFSCI
         22   FILE CROPB
          9   FILE CROPU
          6   FILE DDFU
          9   FILE DRUGU
         49   FILE EMBASE
        117   FILE ESBIOBASE
         24   FILE FEDRIP
          9   FILE FROSTI
          2   FILE FSTA
         12   FILE HEALSAFE
          7   FILE IFIPAT
          2   FILE JICST-EPLUS
  43 FILES SEARCHED...
        284   FILE LIFESCI
         39   FILE MEDLINE
        129   FILE NTIS
          2   FILE OCEAN
          8   FILE PASCAL
          2   FILE PHIN
       1826   FILE PROMT
        500   FILE SCISEARCH
        102   FILE TOXCENTER
         46   FILE USPATFULL
          1   FILE USPAT2
          1   FILE VETU
          1   FILE WPIDS
          1   FILE WPINDEX
         18   FILE NAPRALERT

  39 FILES HAVE ONE OR MORE ANSWERS,   64 FILES SEARCHED IN STNINDEX

L4   QUE BRICKELLBUSH OR CHAPARRAL OR SAGEBRUSH ADJ SCRUB

=> s l4 (5a) (diabetes or hyperglycem? or (blood (3a) glucose))

  24 FILES SEARCHED...
  48 FILES SEARCHED...
          1   FILE PROMT

   1 FILES HAVE ONE OR MORE ANSWERS,   64 FILES SEARCHED IN STNINDEX

L5   QUE L4 (5A) (DIABETES OR HYPERGLYCEM? OR (BLOOD (3A) GLUCOSE))

=> d rank

F1            1   PROMT


=> fil f1
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COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION
FULL ESTIMATED COST | 16.96 | 17.70

FILE 'PROMT' ENTERED AT 15:15:44 ON 29 AUG 2002

FILE COVERS 1978 TO 29 AUG 2002 (20020829/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l5

```
            0 BRICKELLBUSH
         1826 CHAPARRAL
          308 "SAGEBRUSH"
          678 "ADJ"
         3730 "SCRUB"
            0 SAGEBRUSH ADJ SCRUB
              ("SAGEBRUSH"(W)"ADJ"(W)"SCRUB")
        24479 DIABETES
          423 HYPERGLYCEM?
       103745 BLOOD
         9381 GLUCOSE
L6          1 L4 (5A) (DIABETES OR HYPERGLYCEM? OR (BLOOD (3A) GLUCOSE))
```

=> d l6 1- all

YOU HAVE REQUESTED DATA FROM 1 ANSWERS - CONTINUE? Y/(N):y

L6 ANSWER 1 OF 1 PROMT COPYRIGHT 2002 Gale Group

AN 94:203770 PROMT
TI PERSPECTIVE: Animaux savants
SO Haznews, (Mar 1994) pp. N/A.
ISSN: 0953-5357.
LA English
WC 490
TX (by Louis Fournier, STAR Environmental Inc.)

A great deal of attention is being paid today to the appalling rate of loss of the Earth's biodiversity. A television advertisement recently proclaimed that one species becomes extinct every 20 minutes. An obvious question arises: "So what?" An often-given response is that the loss of any species could eliminate forever a potential source of medicine that could be of enormous benefit to Mankind. This raises another question: "Is there any basis for this contention?" Apparently there is a whole host of medicines derived from plants: based on Mankind's historical experience with them, or based on Mankind's observations of the use of plants for medicinal purposes by animals. While the first point is well known, the second may not be.

Chimpanzees in the wild commonly chew on leaves of a shrub called Aspila by wadding them under their tongues, holding them for a while, and then swallowing them whole. Research has shown that the leaves are distasteful to chimps and pass through their systems virtually undigested. However, the process provides the chimps with thiarubrine-

A, a red-coloured oil known to be a potent toxin against fungi, bacteria, and parasitic nematodes. Typically, chimps consume just enough thiarubrine-A to kill between 70-80% of the parasites in their digestive tracts. How do they know to eat this plant and what is the correct dosage?

Similar research has shown that numerous animals rely on plants for medicinal purposes, to control various bodily processes, and to correct dietary deficiencies. A half-century ago, the psychobiologist, Curt P. Richter, demonstrated that rats, allowed to pick their own foods from a wide menu of available items, picked out a remarkably efficient, low-

calorie, high-growth-rate combination of foods. Such work has led to a belief that animals inherently and intuitively know all sorts of wise and wonderful things: a belief in what is termed "animaux savants".

Similarly, Mankind has a history of determining by trial and error or by other means, the foods that are most beneficial. In 1785, the physician, William Withering, published a detailed account of 200 cases of heart failure that he successfully treated with foxglove, a common plant that had been used for centuries. Later, medical research extracted digitalis, a cardiac drug, from this plant. Common white willow bark was also used for centuries as a medicine for certain ailments. The Bayer Company was able to produce synthetically its medically-active ingredient, and introduced "Aspirin" to the world. Equally, cinnamon doesn't just taste good. A polysaccharide in dried cinnamon bark appears to be effective in treating ***diabetes*** . ***Chaparral*** , a tea popular in the American Southwest, contains an ingredient which may fight leukemia, according to research at the University of Florida.

Despite past successes in identifying medically important plants, one still has the feeling that we've just scratched the surface. Maybe "animaux savants" covers human animals too and we will be able to maintain the Earth's biodiversity. There again, maybe not.

CT *PC2830000 Drugs & Pharmaceuticals
CC *EC60 Market Information
GT New: *CC00WOR World
Old: *CC0 W World
FEAT INDUSTRY; NEWSLETTER

=> index bioscience napralert

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS SINCE FILE ENTRY: 5.54 TOTAL SESSION: 23.24

FULL ESTIMATED COST

INDEX 'ADISALERTS, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...'
ENTERED AT 15:17:16 ON 29 AUG 2002

64 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s l2 (s) (glucose or insulin or hyperglyc? or hypoglyc? or diabet?)

22 FILES SEARCHED...
0* FILE FEDRIP
1 FILE FROSTI
1 FILE GENBANK
39 FILES SEARCHED...
1 FILE IFIPAT
1 FILE USPATFULL
61 FILES SEARCHED...
1 FILE WPIDS
1 FILE WPINDEX

6 FILES HAVE ONE OR MORE ANSWERS, 64 FILES SEARCHED IN STNINDEX

L7 QUE L2 (S) (GLUCOSE OR INSULIN OR HYPERGLYC? OR HYPOGLYC? OR DIABET?)

=> d rank

F1 1 FROSTI
F2 1 GENBANK

```
F3           1   IFIPAT
F4           1   USPATFULL
F5           1   WPIDS
F6           1   WPINDEX


=> fil f1, f2, f3, f5

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       2.65      25.89

FILE 'FROSTI' ENTERED AT 15:20:24 ON 29 AUG 2002
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FILE 'GENBANK' ENTERED AT 15:20:24 ON 29 AUG 2002

FILE 'IFIPAT' ENTERED AT 15:20:24 ON 29 AUG 2002
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FILE 'WPIDS' ACCESS NOT AUTHORIZED

=> s l7

L8           3 L7

=> dup rem l8

DUPLICATE IS NOT AVAILABLE IN 'GENBANK'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L8
L9            3 DUP REM L8 (0 DUPLICATES REMOVED)

=> d l9 1- all

YOU HAVE REQUESTED DATA FROM 3 ANSWERS - CONTINUE? Y/(N):y


L9   ANSWER 1 OF 3  IFIPAT  COPYRIGHT 2002 IFI
AN    10125090  IFIPAT;IFIUDB;IFICDB
TI    COMPOSITIONS AND METHODS FOR TREATMENT OF DIABETES
INF   Ziegler; Randy H., Costa Mesa, CA, US
IN    Ziegler Randy H
PAF   Unassigned
PA    Unassigned Or Assigned To Individual (68000)
AG    CROSBY HEAFEY ROACH & MAY, 1901 AVENUE OF THE STARS, SUITE 700, LOS
      ANGELES, CA, 90067 US
PI    US 2002068704   A1  20020606
AI    US 2001-967030      20010927
PRAI  US 1999-127824      19990405 (Provisional)
FI    US 2002068704       20020606
DT    Utility; Patent Application - First Publication
FS    CHEMICAL
FS    APPLICATION
AB    Flavonoids, especially luteolin, are shown to be effective against
      insulin dependent (Type I) and insulin independent (Type II) diabetes
      mellitus. It is demonstrated that luteolin works in mammals by binding
      and blocking the Kv1.3 potassium channel of T-cell and Beta cells.
      Antidiabetic and antiautoimmune compounds can be selected by measuring
      their ability to bind to and block the Kv1.3 channel.
CLMN  17
GI     5 Figure(s).
     FIG. 1 shows the 34-day drop in blood sugar in a Type I human diabetic in
      response to daily administration of luteolin.
     FIG. 2 shows the range of blood sugar in a Type II human diabetic (KT)
      over one week.
     FIG. 3 shows the drop of blood sugar in the diabetic of FIG. 2 following
      administration of 350 mg of luteolin.
     FIG. 4 shows responses in the blood sugar of a Type II human diabetic (TC)
      to 350 mg luteolin (measurements made in duplicate).
     FIG. 5 shows the long term response of Type II diabetic rats to
```

administration of luteolin.

ECLM D R A W I N G

1. An anti-diabetic composition comprising an aqueous extract of plants of the genus Brickellia.

ACLM 2. The anti- ***diabetic*** composition of claim 1, wherein the extract is from ***Brickellia*** ***californica*** .

3. An anti-diabetic composition consisting of a flavonoid selected from the group consisting of luteolin, myricetin, dihydrokaemferol, apigenin, quercetin and mixtures thereof.

4. An anti-diabetic composition consisting of a mixture of luteolin, dihydrokaemferol and apigenin.

5. The anti-diabetic composition of claim 4, wherein the molar concentration of luteolin is at least twice that of dihydrokaemferol and apigenin added together.

6. A method for treatment of diabetes mellitus comprising the step of administering a quantity of an aqueous extract of plants of the genus Brickellia to result in a reduction in blood glucose.

7. The method of claim 6, wherein the extract is from Brickellia californica.

8. A method for treatment of diabetes mellitus consisting of the step of administering a quantity of a flavonoid selected from the group consisting of luteolin, myricetin, dihydrokaemferol, apigenin, quercetin and mixtures thereof to result in a reduction in blood glucose.

9. The method of claim 8, wherein a mixture of luteolin, dihydrokaemferol and apigenin is administered.

10. The method of claim 9, wherein the molar concentration of luteolin is at least twice that of dihydrokaemferol and apigenin added together.

11. A method of controlling diabetes mellitus in a mammal comprising the step of administering to the mammal a molecule that binds to Kv1.3 ion channels.

12. The method of claim 11, wherein the molecule is a flavonoid.

13. The method of claim 12, wherein the flavonoid is luteolin.

14. A method of controlling unwanted proliferation to T-cells in a mammal comprising the step of administering to the mammal a molecule that binds to Kv1.3 ion channels.

15. A method of screening a group of compounds for anti-diabetic activity in a mammal comprising the step of determining which members of the group binds to and blocks Kv1.3 ion channels, wherein the members binding to and blocking Kv1.3 ion channels are selected as having potential anti-diabetic activity.

16. A method of screening a group of compounds for ability to suppress autoimmune responses in a mammal comprising the step of determining which members of the group binds to and blocks Kv1.3 ion channels, wherein the members binding to and blocking Kv1.3 ion channels are selected as having potential ability to suppress autoimmune responses.

17. A compound that contrails diabetes mellitus in a mammal characterized in that the compound binds to and blocks Kv1.3 ion channels,

NCL NCLM: 514027000
NCLS: 424725000; 514456000
[07]

IC ICM: A61K031-7048
ICS: A61K031-353; A61K035-78

L9 ANSWER 2 OF 3 FROSTI COPYRIGHT 2002 LFRA
AN 539542 FROSTI
TI Compositions and methods for treatment of diabetes.
IN Ziegler R.H.
SO PCT Patent Application
PI WO 2000059522 A1 20001012
AI 20000404
PRAI United States 19990405
NTE 20001012
DT Patent
LA English
SL English
AB Natural plant extracts are useful for the treatment of ***diabetes*** . The extracted products contain ***Brickellia*** ***californica*** and isolated flavonoids including luteolin, quercetin and apigenin, purified from ***B*** . ***californica*** .
SH FUNCTIONAL FOODS

CT AROMATIC COMPOUNDS; BRICKELLA CALIFORNICA EXTRACT; DIABETES; DIABETIC SUPPLEMENTS; DIETETIC SUPPLEMENTS; EXTRACTS; FLAVONOIDS; FUNCTIONAL SUPPLEMENTS; METABOLIC DISORDERS; PATENT; PCT PATENT; PLANT EXTRACTS
DED 6 Dec 2000

L9 ANSWER 3 OF 3 GENBANK.RTM. COPYRIGHT 2002

LOCUS (LOC): AP003194 GenBank (R)
GenBank ACC. NO. (GBN): AP003194 BA000016
CAS REGISTRY NO. (RN): 384108-34-3
SEQUENCE LENGTH (SQL): 323930
MOLECULE TYPE (CI): DNA; linear
DIVISION CODE (CI): Bacteria
DATE (DATE): 10 Jul 2002
DEFINITION (DEF): Clostridium perfringens str. 13 DNA, complete genome, section 10/10.
SOURCE: Clostridium perfringens str. 13 (strain:13) DNA.
ORGANISM (ORGN): Clostridium perfringens str. 13
Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridia; Clostridiales; Clostridiaceae; Clostridium
NUCLEIC ACID COUNT (NA): 101598 a 59454 c 37650 g 125228 t
COMMENT:
On Jan 14, 2002 this sequence version replaced gi:18146014.
REFERENCE: 1
AUTHOR (AU): Shimizu,T.; Ohtani,K.; Hirakawa,H.; Ohshima,K.; Yamashita,A.; Shiba,T.; Ogasawara,N.; Hattori,M.; Kuhara,S.; Hayashi,H.
TITLE (TI): Complete genome sequence of Clostridium perfringens, an anaerobic flesh-eater
JOURNAL (SO): Proc. Natl. Acad. Sci. U.S.A., 99 (2), 996-1001 (2002)
OTHER SOURCE (OS): CA 136:145953
REFERENCE: 2 (bases 1 to 323930)
AUTHOR (AU): Shimizu,T.
TITLE (TI): Direct Submission
JOURNAL (SO): Submitted (15-FEB-2001) Tohru Shimizu, Institute of Basic Medical Sciences, University of Tukuba, Department of Microbiology; 1-1-1 Tennohdai, Tsukuba, Ibaraki 305-8575, Japan (E-mail:tshimizu@md.tsukuba.ac.jp, Tel:81-298-53-3354, Fax:81-298-53-3354)

FEATURES (FEAT):

Feature Key	Location	Qualifier
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gene	complement(12..1613)	/gene="CPE2349"
CDS	complement(12..1613)	/gene="CPE2349" /note="533 aa, similar to gp:AB035092-1 Orf1 from Clostridium perfringens (533 aa); 94% identity in 533 aa overlap. 1 putative transmembrane region was found by PSORT" /codon-start=1 /transl-table=11 /product="conserved hypothetical protein" /protein-id="BAB82055.1" /db-xref="GI:18146015" /translation="MTIRINNISLDINEDLSLLK NKVAKKLRMSKDEIGDIKIIKESL DARKKNLIKFNYCINIEHEDEEKIVARLNDKDVK IDKVNYDFDFNFGEKKLQHRPVVI GLGPAGLFAALLLAKKGFNPIVFERGEDVDSRTK TVEEFWRTGELNPESNVQFGEGGA GAFSDGKLTTRIKDTRCDYVLDALVRNGAPEEII

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                                        VVTVGPNDFGGDHPLEGMKFQRHY
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                                        NPSVLSNGYRFEDLRKCLPSYVID
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CDS             complement(1689..3017)  /gene="CPE2350"
                                        /note="442 aa, similar to
                                        pir:A69745 hypothetical protein
                                        ybbR from Bacillus subtilis (483
                                        aa); 22.8% identity in 403 aa
                                        overlap. Putative N-terminal
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                                        LPIVSKIKVNTEHGTYADKINISP
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                                        LTNNNTINKKLGTRHRAAIGLSEI
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gene                5035..5637      /gene="CPE2353"
CDS                 5035..5637      /gene="CPE2353"
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                                    Putative N-terminal signal
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                                    (572 aa); 58.1% identity in 534 aa
                                    overlap PTS system enzyme I"
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                                    LEIPAVVGLGDITTSVKNGDTVIV
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CDS             10415..12421            /gene="CPE2358"
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                                     /note="668 aa, similar to
                                     sp:YQIR-BACSU PUTATIVE SIGMA
                                     L-DEPENDENT TRANSCRIPTIONAL
                                     REGULATOR IN MMGE-BFMBAA
                                     INTERGENIC REGION from Bacillus
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                                     in 524 aa overlap. 1 putative
                                     transmembrane region was found by
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                                     IDEIIDASIVANEQVLESLPIGIVVIDIDQNIIT
                                     INQYALRFIGCNKKDVKGKKINEV
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                                     LFINDKIIGAVSVIQDVSDIIGMK
                                     EINEKFTKILENSQDMICFVDENGIINYLNPAYI
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                                     EQELDYYKNEFLRQLSKNSSFNNIIGSTRTLKDI
                                     MYMCQKASETTSTVLIRGESGTGK
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                                     LFGYEKGAFTGAVQSKPGKFAIAD
                                     TGTIFLDEIGDMPLSMQVKLLRVLQEREIESVGG
                                     ITPKNIDVRVIAATNRNLEEMIEE
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                                     IEYSWPGNIRELENIMERAINLCDGDYIDSSYLP
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CDS             complement(12591..13184 /gene="rpsD"
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                                     from Thermus aquaticus (strain
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                                     IRQARQMVNHGHFLVNGKKVNIPSFRLNIGDEVV
                                     LREKSRKTEMFVNNFKDSIGSEVP
                                     YVSKEEDNFKGIFTRKPKREEIPITIQEQLIVEF
                                     YSK"
gene            complement(13585..14619 /gene="nrdB"
                )
CDS             complement(13585..14619 /gene="nrdB"
                )
                                     /note="344 aa, similar to
                                     sp:RIR2-TREPA
                                     RIBONUCLEOSIDE-DIPHOSPHATE
                                     REDUCTASE BETA CHAIN (EC 1.17.4.1)
```

```
                                        (RIBONUCLEOTIDE REDUCTASE) from
                                        Treponema pallidum (351 aa); 66.1%
                                        identity in 342 aa overlap
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                                        ITASEVNLCLTIQAFQEAVHSQSYSYMLDSICSP
                                        EERNEILFQWKDDAILLQRNKFIG
                                        DLYNNFLEDSSMENFIKSVMANYILEGVYFYSGF
                                        MFFYNLERNGKMPGSAQEIRYINR
                                        DENTHLWLFRSIIKELKEEIPEVFTKELKEELRE
                                        MVRTGVEHEIAWGHYVIGDNVTGI
                                        NKNLIERYIKYIGNLRVKAIGLEPLFEGYNENPA
                                        PWVDYYADANQVKTDFFEAKSTAY
                                        AKAGALIDDL"
gene            complement(14715..16946 /gene="nrdA"
<------User Break------>

CDS             complement(14715..16946 /gene="nrdA"
                )
                                        /note="743 aa, similar to
                                        sp:RIR1-TREPA
                                        RIBONUCLEOSIDE-DIPHOSPHATE
                                        REDUCTASE ALPHA CHAIN (EC
                                        1.17.4.1) (RIBONUCLEOTIDE
                                        REDUCTASE). from Treponema
                                        pallidum (845 aa); 56.5% identity
                                        in 703 aa overlap CPE2361"
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=> index bioscience

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                     ENTRY    SESSION
FULL ESTIMATED COST                                  28.22      54.11

INDEX 'ADISALERTS, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
       BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
       CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
       DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...'
ENTERED AT 15:21:39 ON 29 AUG 2002

63 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s (dihydrokaemferol or apigenin or luteolin or quercetin) (5a) (blood (3a) glucose or diabet? or
hyperglycem? or insulin?)

          1   FILE ADISINSIGHT
          1   FILE BIOBUSINESS
         14   FILE BIOSIS
          1   FILE BIOTECHNO
          2   FILE CABA
```

```
         1   FILE CANCERLIT
        28   FILE CAPLUS
  18 FILES SEARCHED...
         1   FILE CONFSCI
         5   FILE DDFU
         8   FILE DRUGU
        11   FILE EMBASE
         5   FILE ESBIOBASE
  34 FILES SEARCHED...
         2   FILE FROSTI
         1   FILE IFIPAT
         3   FILE JICST-EPLUS
         1   FILE LIFESCI
        11   FILE MEDLINE
         4   FILE PASCAL
  50 FILES SEARCHED...
        11   FILE SCISEARCH
         9   FILE TOXCENTER
         2   FILE USPATFULL
         0*  FILE WPIDS
  62 FILES SEARCHED...
         1   FILE WPINDEX

  22 FILES HAVE ONE OR MORE ANSWERS,   63 FILES SEARCHED IN STNINDEX

L10  QUE (DIHYDROKAEMFEROL OR APIGENIN OR LUTEOLIN OR QUERCETIN) (5A) (BLOOD (3
        A) GLUCOSE OR DIABET? OR HYPERGLYCEM? OR INSULIN?)

=> d rank

F1          28   CAPLUS
F2          14   BIOSIS
F3          11   EMBASE
F4          11   MEDLINE
F5          11   SCISEARCH
F6           9   TOXCENTER
F7           8   DRUGU
F8           5   DDFU
F9           5   ESBIOBASE
F10          4   PASCAL
F11          3   JICST-EPLUS
F12          2   CABA
F13          2   FROSTI
F14          2   USPATFULL
F15          1   ADISINSIGHT
F16          1   BIOBUSINESS
F17          1   BIOTECHNO
F18          1   CANCERLIT
F19          1   CONFSCI
F20          1   IFIPAT
F21          1   LIFESCI
F22          1   WPINDEX


=> fil f1, f2

COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                                16.96      71.07

FILE 'CAPLUS' ENTERED AT 15:40:50 ON 29 AUG 2002
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FILE 'BIOSIS' ENTERED AT 15:40:50 ON 29 AUG 2002
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=> s l10

L11         42 L10
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=> dup rem l11

PROCESSING COMPLETED FOR L11
L12 33 DUP REM L11 (9 DUPLICATES REMOVED)

=> s l12 and (treat? or administer?)

L13 13 L12 AND (TREAT? OR ADMINISTER?)

=> s l13 and diabet?

L14 10 L13 AND DIABET?

=> d l14 1- all

YOU HAVE REQUESTED DATA FROM 10 ANSWERS - CONTINUE? Y/(N):y

L14 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 2002:360963 CAPLUS
DN 137:62647
TI Flavonoid inhibition of sodium-dependent vitamin C transporter 1 (SVCT1) and glucose transporter isoform 2 (GLUT2), intestinal transporters for vitamin C and glucose
AU Song, Jian; Kwon, Oran; Chen, Shenglin; Daruwala, Rushad; Eck, Peter; Park, Jae B.; Levine, Mark
CS Molecular and Clinical Nutrition Section, Digestive Diseases Branch, NIDDK, National Institutes of Health, Bethesda, MD, 20892-1372, USA
SO Journal of Biological Chemistry (2002), 277(18), 15252-15260
CODEN: JBCHA3; ISSN: 0021-9258
PB American Society for Biochemistry and Molecular Biology
DT Journal
LA English
CC 18-7 (Animal Nutrition)
AB Vitamin C and flavonoids, polyphenols with uncertain function, are abundant in fruits and vegetables. We postulated that flavonoids have a novel regulatory action of delaying or inhibiting absorption of vitamin C and glucose, which are structurally similar. From six structural classes of flavonoids, at least 12 compds. were chosen for studies. We investigated the effects of selected flavonoids on the intestinal vitamin C transporter SVCT1(h) by transfecting and overexpressing SVCT1(h) in Chinese hamster ovary cells. Flavonoids reversibly inhibited vitamin C transport in transfected cells with IC50 values of 10-50 .mu.M, concns. expected to have physiol. consequences. The most potent inhibitor class was flavonols, of which quercetin is most abundant in foods. Because Chinese hamster ovary cells have endogenous vitamin C transport, we expressed SVCT1(h) in Xenopus laevis oocytes to study the mechanism of transport inhibition. Quercetin was a reversible and non-competitive inhibitor of ascorbate transport; Ki 17.8 .mu.M. Quercetin was a potent non-competitive inhibitor of GLUT2 expressed in Xenopus oocytes; Ki 22.8 .mu.M. When ***diabetic*** rats were ***administered*** glucose with ***quercetin*** , ***hyperglycemia*** was significantly decreased compared with administration of glucose alone. Quercetin also significantly decreased ascorbate absorption in normal rats given ascorbate plus quercetin compared with rats given ascorbate alone. Quercetin was a specific transport inhibitor, because it did not inhibit intestinal sugar transporters GLUT5 and SGLT1 that were injected and expressed in Xenopus oocytes. Quercetin inhibited but was not transported by SVCT1(h). Considered together, these data show that flavonoids modulate vitamin C and glucose transport by their resp. intestinal transporters and suggest a new function for flavonoids.
ST flavonoid transport glucose vitamin C intestine
IT Transport proteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(GLUT-2 (glucose-transporting, 2); flavonoids effect on the trasport of glucose and vitamin C in the intestine)
IT Intestine
(flavonoids effect on the trasport of glucose and vitamin C in the intestine)
IT Flavonoids

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(flavonoids effect on the trasport of glucose and vitamin C in the intestine)

IT 50-81-7, Vitamin c, biological studies 117-39-5, Quercetin 58367-01-4, Glucose
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(flavonoids effect on the trasport of glucose and vitamin C in the intestine)

RE.CNT 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Bravo, L; Nutr Rev 1998, V56, P317 MEDLINE
(2) Brown, J; Biochem J 1998, V330, P1173 CAPLUS
(3) Brun, J; Diabetes Metab 2000, V26, P337 CAPLUS
(4) Bush, M; Res Commun Chem Pathol Pharmacol 1987, V57, P137 CAPLUS
(5) Conquer, J; J Nutr 1998, V128, P593 CAPLUS
(6) Correa, P; Aliment Pharmacol Ther 1998, V12(Suppl 1), P73
(7) Daruwala, R; FEBS Lett 1999, V460, P480 CAPLUS
(8) Doege, H; Biochem J 2000, V350, P771 CAPLUS
(9) Doege, H; J Biol Chem 2000, V275, P16275 CAPLUS
(10) Emancipator, K; Am J Clin Pathol 1999, V112, P665 CAPLUS
(11) Food and Nutrition Board and Panel on Dietary Antioxidants and Related Compounds; Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids 2000, P95
(12) Gould, G; Biochem J 1993, V295, P329 CAPLUS
(13) Gugler, R; Eur J Clin Pharmacol 1975, V9, P229 CAPLUS
(14) Gutierrez, M; J Am Coll Nutr 1998, V17, P595 CAPLUS
(15) Hecht, S; Proc Soc Exp Biol Med 1997, V216, P181 CAPLUS
(16) Hediger, M; Physiol Rev 1994, V74, P993 CAPLUS
(17) Helliwell, P; Biochem J 2000, V350, P149 CAPLUS
(18) Helliwell, P; Biochem J 2000, V350, P163 CAPLUS
(19) Hertog, M; Nutr Cancer 1993, V20, P21 CAPLUS
(20) Hollman, P; Food Chem Toxicol 1999, V37, P937 CAPLUS
(21) Ibberson, M; J Biol Chem 2000, V275, P4607 CAPLUS
(22) International Life Sciences Institute North America Technical Committee on Food Components for Health Promotion; Crit Rev Food Sci Nutr 1999, V39, P203
(23) Kellett, G; Biochem J 2000, V350, P155 CAPLUS
(24) Kimmich, G; Membr Biochem 1978, V1, P221 CAPLUS
(25) Kuo, S; Cancer Lett 1997, V116, P131 CAPLUS
(26) Lamson, D; Altern Med Rev 2000, V5, P196 MEDLINE
(27) Lefevre, P; J Biol Chem 1959, V234, P3022 CAPLUS
(28) Levine, M; Methods Enzymol 1999, V299, P65 CAPLUS
(29) Levine, M; Proc Natl Acad Sci U S A 1996, V93, P3704 CAPLUS
(30) Lisinski, I; Biochem J 2001, V358, P517 CAPLUS
(31) Long, L; Biochem Biophys Res Commun 2000, V273, P50 CAPLUS
(32) Malo, C; J Nutr 2000, V130, P63 CAPLUS
(33) Mann, G; Ann N Y Acad Sci 1975, V258, P243 CAPLUS
(34) Mooradian, A; Drugs 1999, V57, P19 CAPLUS
(35) Mueckler, M; Eur J Biochem 1994, V219, P713 CAPLUS
(36) Noroozi, M; Am J Clin Nutr 1998, V67, P1210 CAPLUS
(37) Noteborn, H; Cancer Lett 1997, V114, P175 CAPLUS
(38) Oldreive, C; Chem Res Toxicol 1998, V11, P1574 CAPLUS
(39) Olthof, M; J Nutr 2000, V130, P1200 CAPLUS
(40) Park, E; Int J Vitam Nutr Res 1999, V69, P396 CAPLUS
(41) Park, J; J Nutr 2000, V130, P1297 CAPLUS
(42) Pietta, P; J Nat Prod (Lloydia) 2000, V63, P1035 CAPLUS
(43) Rumsey, S; J Biol Chem 1997, V272, P18982 CAPLUS
(44) Rumsey, S; J Biol Chem 2000, V275, P28246 CAPLUS
(45) Scalbert, A; J Nutr 2000, V130(Suppl 8), P2073S
(46) Skaper, S; Free Radic Biol Med 1997, V22, P669 CAPLUS
(47) Tsukaguchi, H; Nature 1999, V399, P70 CAPLUS
(48) Vera, J; Blood 1994, V84, P1628 CAPLUS
(49) Vera, J; J Biol Chem 1996, V271, P8719 CAPLUS
(50) Verlangieri, A; Life Sci 1991, V48, P2275 CAPLUS
(51) Vermeer, I; Mutat Res 1999, V428, P353 CAPLUS
(52) Vinson, J; Adv Exp Med Biol 1998, V439, P151 CAPLUS
(53) Walle, T; J Nutr 2000, V130, P2658 CAPLUS
(54) Wang, Y; Biochem Biophys Res Commun 2000, V267, P488 CAPLUS
(55) Washko, P; J Biol Chem 1989, V264, P18996 CAPLUS
(56) Washko, P; J Biol Chem 1992, V267, P23568 CAPLUS
(57) Washko, P; J Biol Chem 1993, V268, P15531 CAPLUS

(58) Zeng, L; Biochem Cell Biol 1997, V75, P717 CAPLUS

L14 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 2001:931520 CAPLUS
DN 137:119399
TI Protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats
AU Xu, Xiangjin; Zhang, Liqun; Wang, Qingbiao; Feng, Xiugao; Zheng, Zhiyong; Chen, Pin
CS Department of Endocrinology, Fuzhou General Hospital of PLA Nanjing military region, Fuzhou, 350025, Peop. Rep. China
SO Zhonghua Neifenmi Daixie Zazhi (2001), 17(5), 316-319
CODEN: ZNDZEK; ISSN: 1000-6699
PB Shanghaishi Neifenmi Yanjiuso
DT Journal
LA Chinese
CC 1-10 (Pharmacology)
AB The protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats was studied. STZ-induced ***diabetic*** rats were given ***quercetin*** 100 mg kg- 1 d-1 for 8 wk. Urinary albumin excretion rate (UAER) was measured by RIA. The changes of creatinine clearance rate (Ccr) and glomerular protein kinase C (PKC) activities were detd. The expression of TGF-.beta.1 mRNA of renal cortex in ***diabetic*** rats were detd. by RT-PCR anal. The glomerular changes were also obsd. morphol. In untreated ***diabetic*** rats, Ccr, UAER, kidney wt./body wt. and PKC activity in renal glomeruli were significantly increased, the expression of TGF-.beta.1 mRNA in renal cortex was elevated, and glomerular hypertrophy existed. After Quercetin ***treatment*** , Ccr, UAER, PKC activity and the expression of TGF-.beta.1 mRNA were markedly reduced as compared with those of untreated ***diabetic*** rats in 2 and 8 wk, no significantly abnormal changes in kidney morphol. were obsd. in Quercetin- ***treated*** group. ***Quercetin*** ameliorates early ***diabetic*** renal hyperdynamic abnormality via inhibiting PKC activity, in which inhibiting of TGF-.beta.1 prodn. seems to be also involved. Redn. of the PKC activity is important in preventing or delaying the development of ***diabetic*** nephropathy.
ST ***diabetic*** nephropathy ***quercetin*** PKC TGF
IT mRNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(TGF-.beta.1; protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats)
IT Kidney, disease
(***diabetic*** nephropathy; protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats)
IT ***Diabetes*** mellitus
(nephropathy; protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats)
IT Transforming growth factors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(.beta.1-; protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats)
IT 141436-78-4, Protein kinase C
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats)
IT 117-39-5, Quercetin
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protective effect of ***Quercetin*** on kidneys in ***diabetic*** rats)

L14 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 2001:411767 CAPLUS
DN 135:190374
TI Effects of quercetin on antioxidant defense in streptozotocin-induced ***diabetic*** rats
AU Sanders, Ruth A.; Rauscher, Frederick M.; Watkins, John B., III
CS Medical Sciences Program, Indiana University School of Medicine, Bloomington, IN, 47405-7005, USA
SO Journal of Biochemical and Molecular Toxicology (2001), 15(3), 143-149

CODEN: JBMTFQ; ISSN: 1095-6670
PB John Wiley & Sons, Inc.
DT Journal
LA English
CC 1-12 (Pharmacology)
AB In light of evidence that some complications of ***diabetes*** mellitus may be caused or exacerbated by oxidative damage, we investigated the effects of subacute ***treatment*** with the antioxidant quercetin on tissue antioxidant defense systems in streptozotocin-induced ***diabetic*** Sprague-Dawley rats (30 days after streptozotocin induction). Quercetin, 2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxy-4H-1-benzopyran-4-one, was ***administered*** at a dose of 10mg/kg/day, i.p. for 14 days, after which liver, kidney, brain, and heart were assayed for degree of lipid peroxidn., reduced and oxidized glutathione content, and activities of the free-radical detoxifying enzymes catalase, superoxide dismutase, glutathione peroxidase, and glutathione reductase. ***Treatment*** of normal rats with quercetin increased serum AST and increased hepatic concn. of oxidized glutathione. All tissues from ***diabetic*** animals exhibited disturbances in antioxidant defense when compared with normal controls. ***Quercetin*** ***treatment*** of ***diabetic*** rats reversed only the ***diabetic*** effects on brain oxidized glutathione concn. and on hepatic glutathione peroxidase activity. By contrast, a 20% increase in hepatic lipid peroxidn., a 40% decline in hepatic glutathione concn., an increase in renal (23%) and cardiac (40%) glutathione peroxidase activities, and a 65% increase in cardiac catalase activity reflect intensified ***diabetic*** effects after ***treatment*** with ***quercetin*** . These results call into question the ability of therapy with the antioxidant ***quercetin*** to reverse ***diabetic*** oxidative stress in an overall sense.
ST antioxidant ***quercetin*** oxidative stress lipid peroxidn ***diabetes***
IT ***Diabetes*** mellitus
Oxidative stress, biological
(effects of ***quercetin*** on antioxidant defense in streptozotocin-induced ***diabetic*** rats)
IT Peroxidation
(lipid; effects of quercetin on antioxidant defense in streptozotocin-induced ***diabetic*** rats)
IT Lipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(peroxidn.; effects of quercetin on antioxidant defense in streptozotocin-induced ***diabetic*** rats)
IT Antioxidants
(pharmaceutical; effects of quercetin on antioxidant defense in streptozotocin-induced ***diabetic*** rats)
IT 117-39-5, Quercetin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effects of quercetin on antioxidant defense in streptozotocin-induced ***diabetic*** rats)
IT 70-18-8, Reduced glutathione, biological studies 9001-05-2, Catalase 9001-48-3, Glutathione reductase 9013-66-5, Glutathione peroxidase 9054-89-1, Superoxide dismutase 27025-41-8, Oxidized glutathione
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of quercetin on antioxidant defense in streptozotocin-induced ***diabetic*** rats)
RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Adachi, T; Free Radic Biol Med 1992, V13, P205 CAPLUS
(2) Asgary, S; Pharm Acta Helv 1999, V73, P223 CAPLUS
(3) Baynes, J; Diabetes 1991, V40, P405 CAPLUS
(4) Buyukdevrim, A; Diabetes Metab 1994, V20, P87 MEDLINE
(5) Candlish, J; Biomed Environ Sci 1996, V9, P117 MEDLINE
(6) Carlberg, I; J Biol Chem 1975, V250, P5475 CAPLUS
(7) Cossins, E; Biochem Mol Biol Int 1998, V45, P583 CAPLUS
(8) Crapo, J; Methods Enzymol 1978, V53, P382 CAPLUS
(9) Decker, E; Nutr Rev 1995, V53, P49 MEDLINE

(10) Duthie, S; Eur J Nutr 1999, V38, P28 CAPLUS
(11) Galijatovic, A; Pharm Res 2000, V17, P21 CAPLUS
(12) Gee, J; Free Radic Biol Med 1998, V25, P19 CAPLUS
(13) Godin, D; Mol Cell Biochem 1988, V84, P223 CAPLUS
(14) Ha, H; Diabetes Res Clin Pract 1999, V45, P147 CAPLUS
(15) Halliwell, B; Free radicals in biology and medicine. 2nd ed 1989
(16) Hissin, P; Anal Biochem 1976, V74, P214 CAPLUS
(17) Hunt, J; Biochem J 1988, V256, P205 CAPLUS
(18) Josephy, P; Molecular toxicology 1997
(19) Kakkar, R; Life Sci 1997, V60, P667 CAPLUS
(20) Kakkar, R; Mol Cell Biochem 1995, V151, P113 CAPLUS
(21) Kehrer, J; Crit Rev Toxicol 1993, V23, P21 CAPLUS
(22) Laughton, M; Biochem Pharmacol 1991, V42, P1673 CAPLUS
(23) Lowry, O; J Biol Chem 1951, V193, P265 CAPLUS
(24) Luck, H; Methods of enzymatic analysis 1963, P885
(25) Mak, D; Mol Cell Biochem 1996, V162, P153 CAPLUS
(26) Manuel y Keenoy, B; Diabetes Nutr Metab 1999, V12, P256 CAPLUS
(27) Meister, A; J Biol Chem 1988, V263, P17205 CAPLUS
(28) Morand, C; Am J Physiol 1998, V275, PR212 CAPLUS
(29) Mukherjee, B; Immunol Cell Biol 1994, V72, P109 CAPLUS
(30) Nagasawa, H; J Med Chem 1996, V39, P1676 CAPLUS
(31) National Research Council; Guide for the Care and Use of Laboratory Animals 1996
(32) Ohkawa, H; Anal Biochem 1979, V95, P351 CAPLUS
(33) Picq, M; Life Sci 1991, V49, P1979 CAPLUS
(34) Plumb, G; Redox Rep 1999, V4, P123 CAPLUS
(35) Rauscher, F; J Biochem Mol Toxicol 2000, V14, P189 CAPLUS
(36) Rauscher, F; J Biochem Mol Toxicol 2000, V15, P41
(37) Rauscher, F; J Mol Biochem Toxicol 2000, V14, P329 CAPLUS
(38) Rice-Evans, C; Free Radic Biol Med 1996, V20, P933 CAPLUS
(39) Robak, J; Biochem Pharmacol 1988, V37, P837 CAPLUS
(40) Santos, A; Free Radic Biol Med 1998, V24, P1455 CAPLUS
(41) Saxena, A; Biochem Pharmacol 1993, V45, P539 CAPLUS
(42) Skaper, S; Free Radic Biol Med 1997, V22, P669 CAPLUS
(43) Tappel, A; Methods Enzymol 1978, V52, P506 CAPLUS
(44) Walsh Clang, C; Toxicol Appl Pharmacol 1997, V146, P144 MEDLINE
(45) Wei, Z; Redox Report 1997, V3, P219 CAPLUS
(46) Wohaieb, S; Diabetes 1987, V36, P1014 CAPLUS
(47) Wolff, S; Br Med Bull 1993, V49, P642 CAPLUS
(48) Yagi, K; New trends in biological chemistry 1991, P207 CAPLUS
(49) Yamashita, N; Mutat Res 1999, V425, P107 CAPLUS

L14 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 1999:19011 CAPLUS
DN 130:181847
TI Dietary flavonols protect ***diabetic*** human lymphocytes against oxidative damage to DNA
AU Jean, Michael E. J.; Noroozi, Mostafa; Kelly, Irene; Burns, Jennifer; Talwar, Dinesh; Sattar, Naveed; Crozier, Alan
CS Department of Human Nutrition, Glasgow Royal Infirmary, University of Glasgow, G31 2ER, UK
SO Diabetes (1999), 48(1), 176-181
CODEN: DIAEAZ; ISSN: 0012-1797
PB American Diabetes Association
DT Journal
LA English
CC 18-2 (Animal Nutrition)
Section cross-reference(s): 14
AB ***Diabetic*** patients have reduced antioxidant defenses and suffer from an increased risk of free radical-mediated diseases such as coronary heart disease. Epidemiol. evidence has suggested that antioxidant dietary flavonoids may protect against heart disease, but a biol. effect has yet to be demonstrated directly in humans. In this study, 10 stable type 2 ***diabetic*** patients were ***treated*** for 2 wk on a low-flavonol diet and for 2 wk on the same diet supplemented with 76-110 mg of flavonols (mostly quercetin) provided by 400 g of onions (and tomato sauce) and six cups of tea daily. Freshly collected lymphocytes were subjected to std. oxidative challenge with hydrogen peroxide, and DNA damage was measured by single-cell gel electrophoresis. Fasting plasma flavonol concns. (measured by high-performance liq. chromatog.) were 5.6 .+-. 2.9 ng/mL on the low-flavonol diet and increased 12-fold to 72.1 .+-.

15.8 ng/mL on the high-flavonol diet (P < 0.001). Oxidative damage to lymphocyte DNA was 220 .+-. 12 on an arbitrary scale of 0-400 U on the low-flavonol diet and 192 .+-. 14 on the high-flavonol diet (P = 0.037). This decrease was not accounted for by any change in the measurements of ***diabetic*** control (fasting plasma glucose or fructosamine) or by any change in the plasma levels of known antioxidants, including vitamin C, carotenoids, .alpha.-tocopherol, urate, albumin, and bilirubin. In conclusion, we have shown a biol. effect of potential medical importance that appears to be assocd. with the absorption of dietary flavonols.

ST lymphocyte DNA autoxidn ***diabetes*** diet flavonol

IT Tea products
(beverages; dietary flavonols protect ***diabetic*** human lymphocytes against oxidative damage to DNA)

IT Antioxidants
Autoxidation
Lymphocyte
Onion (Allium cepa)
(dietary flavonols protect ***diabetic*** human lymphocytes against oxidative damage to DNA)

IT DNA
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(dietary flavonols protect ***diabetic*** human lymphocytes against oxidative damage to DNA)

IT Flavones
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydroxy; dietary flavonols protect ***diabetic*** human lymphocytes against oxidative damage to DNA)

IT ***Diabetes*** mellitus
(non-insulin-dependent; dietary flavonols protect ***diabetic*** human lymphocytes against oxidative damage to DNA)

IT 117-39-5, ***Quercetin***
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(dietary flavonols protect ***diabetic*** human lymphocytes against oxidative damage to DNA)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Armstrong, A; Free Radic Biol Med 1996, V21, P719 CAPLUS
(2) Asahara, H; Gene Biochem 1989, V28, P4444 CAPLUS
(3) Asayama, K; Free Radic Biol Med 1993, V15, P597 MEDLINE
(4) Azia, A; Free Radic Res 1998, V29, P257
(5) Ceriello, A; Clin Sci 1991, V81, P739 MEDLINE
(6) Collins, A; Carcinogenesis 1993, V14, P1733 CAPLUS
(7) Collins, A; Mutat Res 1995, V336, P69 CAPLUS
(8) Crozier, A; J Agr Food Chem 1997, V45, P590 CAPLUS
(9) Dandona, P; Lancet 1996, V347, P444 MEDLINE
(10) Davie, S; Diabetes 1992, V41, P167 CAPLUS
(11) de Whalley, C; Biochem Pharmacol 1990, V39, P1743 CAPLUS
(12) Denson, K; Clin Sci 1961, V21, P157 MEDLINE
(13) Diabetes And Nutrition Study Group; Diabetes Nutr Metab 1995, V8, P186
(14) Gardiner, P; J Trace Elements Med Biol 1995, V9, P74 CAPLUS
(15) Gazis, A; BMJ 1997, V314, P1845 MEDLINE
(16) Hertog, M; J Agr Food Chem 1992, V40, P1591 CAPLUS
(17) Hertog, M; Lancet 1993, V342, P1007 MEDLINE
(18) Hollman, P; Am J Clin Nutr 1995, V62, P1276 CAPLUS
(19) Hollman, P; Free Radic Bio Med 1996, V21, P703 CAPLUS
(20) Jennings, P; Diabet Med 1991, V8, P860 MEDLINE
(21) Jones, A; Diabet Med 1985, V2, P502A
(22) Keli, S; Arch Intern Med 1996, V154, P637
(23) Knekt, P; BMJ 1996, V312, P478 CAPLUS
(24) Kohnau, J; World Rev Nutr 1976, V24, P117
(25) Leinonen, J; FEBS Lett 1997, V417, P150 CAPLUS
(26) Lyons, T; Diabet Med 1991, V8, P411 MEDLINE
(27) McAnlis, G; Proc Nutr Soc In press
(28) Miller, N; Clin Sci 1993, V84, P407 MEDLINE
(29) Noroozi, M; Am J Clin Nutr 1998, V67, P1210 CAPLUS
(30) Oberley, L; Free Radic Biol Med 1988, V5, P113 CAPLUS

(31) Paolisso, G; Am J Clin Nutr 1993, V57, P650 MEDLINE
(32) Rusznyak, S; Nature 1936, V138, P798
(33) Sinclair, A; Gerontology 1992, V38, P268 MEDLINE
(34) Talwar, D; Clin Chim Acta 1998, V23, P85
(35) Valezquez, E; Diabet Med 1991, V8, P752
(36) Vertommen, J; Phytother Res 1994, V8, P430 CAPLUS
(37) Vijayalingam, S; Diabet Med 1996, V13, P715 MEDLINE
(38) Wolffe, S; Free Radic Biol Med 1991, V10, P339
(39) Young, I; Free Radic Biol Med 1992, V13, P41 CAPLUS

L14 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 1998:506523 CAPLUS
DN 129:298223
TI Effects of quercetin on inhibition of non-enzymic glycation and oxidation in kidney of streptozotocin-induced ***diabetic*** rats
AU Xu, Xiangjin; Zhang, Jiaqing; Huang, Qingling
CS Department of Endocrinology, Fuzhou General Hospital of PLA, Fuzhou, 350025, Peop. Rep. China
SO Zhonghua Neifenmi Daixie Zazhi (1998), 14(1), 34-37
CODEN: ZNDZEK; ISSN: 1000-6699
PB Shanghaishi Neifenmi Yanjiuso
DT Journal
LA Chinese
CC 1-10 (Pharmacology)
AB Quercetin of 100 mg kg-1 d-1 was given to streptozotocin-induced ***diabetic*** rats to investigate the inhibitory effects of ***Quercetin*** on ***diabetic*** nephropathy. Rats were killed after 9 wk ***treatment*** . Body wt., kidney wt., blood glucose, insulin, LPO (lipid peroxide), frutosamine and RBC-SOD were measured. LPO, fructosamine, the fluorescence intensities of AGEs, pentosidine, lipoperoxide adduct in renal cortex were also measured. The early non-enzymic glycation products fructosamine were not inhibited in Quercetin- ***treated*** group, however, LPO and the fluorescence intensities of AGEs, pentosidine, and MDA and HNE adduct in renal cortex were significantly reduced in Quercetin- ***treated*** group than untreated DM group. The urinary albumin excretion in Quercetin group was significantly decreased than untreated in the ***treated*** group. Glomerular basement membrane thickening and mesangial matrix expansion were improved in the ***treated*** group. The results suggest that Quercetin may inhibit non-enzymic glycation and oxidn. in the kidney of streptozotocin-induced ***diabetic*** rats and control the ***diabetic*** nephropathy.
ST ***quercetin*** glycation oxidn kidney ***diabetic*** nephropathy
IT Oxidation
(biol.; effects of quercetin on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)
IT Kidney, disease
(***diabetic*** nephropathy; effects of ***quercetin*** on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)
IT Glycation
Kidney
(effects of quercetin on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)
IT Albumins, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of quercetin on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)
IT Peroxides, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(lipid; effects of quercetin on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)
IT ***Diabetes*** mellitus
(nephropathy; effects of ***quercetin*** on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)
IT Lipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(peroxides; effects of quercetin on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)

IT 117-39-5, Quercetin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effects of quercetin on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)

IT 4429-04-3, Fructosamine 124505-87-9, Pentosidine
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of quercetin on inhibition of non-enzymic glycation and oxidn. in kidney of streptozotocin-induced ***diabetic*** rats)

L14 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 1998:242341 CAPLUS
DN 129:413
TI Protective effect of quercetin on pathological change in peripheral nerve in ***diabetic*** rats
AU Wang, Xinjia; He, Guofen; Yun, Keming; Li, Guimin; Zhang, Hui
CS Department of Internal Medicine, The Second Affiliated Hospital, Shanxi Medical University, Taiyuan, 030001, Peop. Rep. China
SO Zhongguo Yaolixue Yu Dulixue Zazhi (1997), 11(3), 233-234
CODEN: ZYYZEW; ISSN: 1000-3002
PB Zhongguo Yaolixue Yu Dulixue Zazhi Biarjibu
DT Journal
LA Chinese
CC 1-10 (Pharmacology)
AB The motor nerve conduction velocity (MNCV) and the content of advanced glycosylation end products (AGEP) in quercetin- ***treated*** sciatic nerve were examd. and compared with the effect of aminoguanidine (50 mg kg-1 d-1 for 16 wk, ig). Quercetin (100 mg kg-1 d-1 for 16 wk, ig) ***treatment*** significantly lowered the content of AGEP and improved the MNCV in the sciatic nerve. The findings suggest that quercetin may have a similar protective role in ***diabetic*** neuropathy as aminoguanidine.
ST ***quercetin*** ***diabetic*** neuropathy
IT Nerve, disease
(***diabetic*** neuropathy; protective effect of ***quercetin*** on pathol. change in peripheral nerve in ***diabetic*** rats)
IT Nerve
(peripheral; protective effect of quercetin on pathol. change in peripheral nerve in ***diabetic*** rats)
IT ***Diabetes*** mellitus
Glycosylation
(protective effect of ***quercetin*** on pathol. change in peripheral nerve in ***diabetic*** rats)
IT 117-39-5, Quercetin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protective effect of quercetin on pathol. change in peripheral nerve in ***diabetic*** rats)

L14 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 1996:322603 CAPLUS
DN 125:75991
TI Effects of luteolin 5-O-.beta.-rutinoside in streptozotocin-induced ***diabetic*** rats
AU Zarzuelo, A.; Jimenez, I.; Gamez, M. J.; Utrilla, P.; Fernadez, I.; Torres, M. I.; Osuna, I.
CS Dep. Farmacologia, Univ. Granada, Granada, 18071, Spain
SO Life Sciences (1996), 58(25), 2311-2316
CODEN: LIFSAK; ISSN: 0024-3205
PB Elsevier
DT Journal
LA English
CC 1-10 (Pharmacology)
AB We have investigated the antidiabetic activity of luteolin 5-rutinoside in streptozotocin(STZ)-induced ***diabetic*** rats. ***Treatment*** for 20 days with 2 mg/kg increased both pancreatic insulin and DNA

content. When both luteolin 5-rutinoside (2 mg/kg) and glibenclamide (1 mg/kg) were ***administered*** concurrently to STZ- ***diabetic*** rats, a marked antidiabetic activity was achieved. This effect was evidenced by a significant decrease in glycemia levels (>50%), a 2.5-fold increase in insulin blood levels and an increase in body and pancreas wt., compared to the ***diabetic*** control group.

ST ***luteolin*** rutinoside glybenclamide antidiabetic ***hyperglycemia***

IT Antidiabetics and Hypoglycemics
(luteolin rutinoside plus glibenclamide show marked antidiabetic activity)

IT Drug interactions
(synergistic, luteolin rutinoside plus glibenclamide show marked antidiabetic activity)

IT 10238-21-8, Glibenclamide 140380-87-6
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(luteolin rutinoside plus glibenclamide show marked antidiabetic activity)

L14 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 1994:45628 CAPLUS
DN 120:45628
TI Effectiveness of ***quercetin*** in experimental ***diabetes*** mellitus
AU Nuraliev, Yu. N.; Avezov, G. A.
CS Inst. Gastroenterol., Tajikistan
SO Dokl. Akad. Nauk Resp. Tadzh. (1992), 35(3-4), 186-9
CODEN: DTAREJ
DT Journal
LA Russian
CC 1-10 (Pharmacology)
AB Quercetin (10 and 50 mg/kg) had a marked antidiabetic effect in alloxan-***treated*** rats.

ST ***quercetin*** ***diabetes*** antidiabetic

IT Antidiabetics and Hypoglycemics
(quercetin)

IT ***Diabetes*** mellitus
(non- ***insulin*** -dependent, ***quercetin*** therapy for)

IT 117-39-5, Quercetin
RL: BIOL (Biological study)
(antidiabetic effectiveness of)

L14 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2002 ACS
AN 1993:139617 CAPLUS
DN 118:139617
TI The efficacy of ***quercetin*** in alloxan ***diabetes***
AU Nuraliev, Yu. N.; Averzov, G. A.
CS Dep. Pathophysiol. Exp. Pharmacother., Inst. Gastroenterol., Dushanbe, 734002, Tajikistan
SO Eksp. Klin. Farmakol. (1992), 55(1), 42-4
CODEN: EKFAE9
DT Journal
LA Russian
CC 1-10 (Pharmacology)
AB Quercetin in doses of 10 and 50 mg/kg promoted normalization of glycemia, blood coagulation, liver glycogen content, blood serum concns. of cholesterol and low d. lipoproteins in ***diabetes*** mellitus in rats. The efficacy of quercetin exceeds that of chlorpropamide and dry Eleutherococcus ext.

ST ***quercetin*** ***diabetes*** metabolic disorder

IT Liver, composition
(glycogen of, ***quercetin*** effects on, in ***diabetes*** mellitus)

IT Antidiabetics and Hypoglycemics
(quercetin as, metabolic disorders response to)

IT Blood coagulation
Blood sugar
(***quercetin*** effects on, in ***diabetes*** mellitus)

IT 117-39-5, ***Quercetin***

RL: BIOL (Biological study)
(***diabetic*** metabolic disorders ***treatment*** by)
IT 57-88-5, Cholesterol, biological studies
RL: BIOL (Biological study)
(of blood serum, ***quercetin*** effects on, in ***diabetes***
mellitus)
IT 9005-79-2, Glycogen, biological studies
RL: BIOL (Biological study)
(of liver, ***quercetin*** effects on, in ***diabetes***
mellitus)

L14 ANSWER 10 OF 10 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.
AN 1984:325601 BIOSIS
DN BA78:62081
TI THE HYPO GLYCEMIC PROPERTIES OF BRIDELIA-FERRUGINEA.
AU IWU M M
CS PHYTOTHERAPY RES. LAB., FAC. PHARMACEUTICAL SCI., UNIV. NIGERIA, NSUKKA, NIGERIA.
SO FITOTERAPIA, (1983 (1984)) 54 (6), 243-248.
CODEN: FTRPAE. ISSN: 0367-326X.
FS BA; OLD
LA English
AB The fasting blood sugar levels of maturity onset ***diabetic*** patients were lowered to normal by daily doses of aqueous extracts of B. ferruginea leaves. Glycosaria was eliminated after 2 wk of therapy even in cases where ketosis had already been established. In experimental animals, alcoholic and aqueous extracts of this plant significantly lowered the fasting blood sugar but failed to protect the animals adequately against alloxan induced ***diabetes*** . They significantly lowered the expected hyperglycemia in alloxan- ***treated*** rats when ***administered*** 1 h prior to alloxan injection. Flavonoids and biflavonoids based on apigenin and kaempferon moieties were isolated together with their O- and C-glycosides from the methanolic extract of this plant.
CC Clinical Biochemistry; General Methods and Applications *10006
Biochemical Studies - General 10060
Biochemical Studies - Nucleic Acids, Purines and Pyrimidines 10062
Biochemical Studies - Carbohydrates 10068
Pathology, General and Miscellaneous - Therapy 12512
Metabolism - Carbohydrates *13004
Metabolism - Metabolic Disorders *13020
Blood, Blood-Forming Organs and Body Fluids - Blood and Lymph Studies 15002
Endocrine System - Pancreas *17008
Pharmacology - Clinical Pharmacology *22005
Pharmacology - Endocrine System *22016
Toxicology - General; Methods and Experimental 22501
Plant Physiology, Biochemistry and Biophysics - Chemical Constituents 51522
Pharmacognosy and Pharmaceutical Botany 54000
BC Euphorbiaceae 26055
Hominidae 86215
Muridae 86375
IT Miscellaneous Descriptors
HUMAN RAT KAEMPFEROL ***APIGENIN*** BI FLAVONOIDS FLAVONOIDS
METABOLIC-DRUG ***DIABETIC*** HYPER GLYCEMIA GLYCOSURIA KETOSIS
RN 520-18-3 (KAEMPFEROL)
520-36-5 (APIGENIN)

=> s luteolin

L15 4598 LUTEOLIN

=> fil reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	54.50	125.57

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL

```
                                                          ENTRY    SESSION
CA SUBSCRIBER PRICE                                       -5.58      -5.58

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Calculated physical property data is now available.  See HELP PROPERTIES
for more information.  See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> e luteolin/cn

E1            1     LUTEOLIC ACID/CN
E2            1     LUTEOLIFLAVAN/CN
E3            1 --> LUTEOLIN/CN
E4            1     LUTEOLIN 3',4',7-TRIMETHYL ETHER/CN
E5            1     LUTEOLIN 3',4',7-TRISULFATE/CN
E6            1     LUTEOLIN 3',4'-DI-O-.BETA.-D-GLUCURONIDE/CN
E7            1     LUTEOLIN 3',4'-DI-O-GALACTURONIDE/CN
E8            1     LUTEOLIN 3',4'-DI-O-GLUCURONIDE/CN
E9            1     LUTEOLIN 3',4'-DIMETHYL ETHER/CN
E10           1     LUTEOLIN 3',7-DI-O-GLUCURONIDE/CN
E11           1     LUTEOLIN 3',7-DIGLUCOSIDE/CN
E12           1     LUTEOLIN 3',7-DIMETHYL ETHER/CN

=> s e3

L16           1 LUTEOLIN/CN

=> d l16


L16  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2002 ACS
RN   491-70-3  REGISTRY
CN   4H-1-Benzopyran-4-one, 2-(3,4-dihydroxyphenyl)-5,7-dihydroxy- (9CI)  (CA
     INDEX NAME)
OTHER CA INDEX NAMES:
CN   Flavone, 3',4',5,7-tetrahydroxy- (8CI)
CN     ***Luteolin (6CI)***
OTHER NAMES:
CN   2-(3,4-Dihydroxyphenyl)-5,7-dihydroxy-4H-1-benzopyran-4-one
CN   3',4',5,7-Tetrahydroxyflavone
CN   5,7,3',4'-Tetrahydroxyflavone
CN   Cyanidenon 1470
CN   Digitoflavone
CN   Flacitran
CN   Luteoline
CN   Luteolol
CN   Weld lake
CN   Yama Kariyasu
FS   3D CONCORD
DR   12671-63-5
MF   C15 H10 O6
CI   COM
LC   STN Files:   AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
       BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST,
       CSCHEM, DDFU, DRUGU, EMBASE, HODOC*, IPA, MEDLINE, MRCK*, NAPRALERT,
       PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, USPATFULL, VETU
```

(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

/ Structure 1 in file .gra /

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2192 REFERENCES IN FILE CA (1967 TO DATE)
164 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
2198 REFERENCES IN FILE CAPLUS (1967 TO DATE)
52 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> fil caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	5.96	131.53

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-5.58

FILE 'CAPLUS' ENTERED AT 15:49:19 ON 29 AUG 2002
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FILE COVERS 1907 - 29 Aug 2002 VOL 137 ISS 9
FILE LAST UPDATED: 27 Aug 2002 (20020827/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> s l16

L17 2195 L16

=> s l17 (5a) diabet?

83433 DIABET?
L18 0 L17 (5A) DIABET?

=> s l17 (10a) (diabet? or (blood (3a) glucose))

83433 DIABET?
987205 BLOOD
338060 GLUCOSE
L19 1 L17 (10A) (DIABET? OR (BLOOD (3A) GLUCOSE))

=> d l19 1- all

YOU HAVE REQUESTED DATA FROM 1 ANSWERS - CONTINUE? Y/(N):y

L19 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
AN 1999:30510 CAPLUS
DN 130:246980
TI Search for naturally occurring substances for prevention against the complications of diabetes: inhibitory effect on aldose reductase and platelet aggregation
AU Okada, Y.; Tachibana, K.; Miyauchi, N.; Okuyama, T.
CS Department of Pharmacognosy and Phytochemistry, Meiji College of Pharmacy, Tokyo, 154, Japan
SO International Congress Series (1998), 1157(Towards Natural Medicine Research in the 21st Century), 295-303
CODEN: EXMDA4; ISSN: 0531-5131
PB Elsevier Science B.V.
DT Journal
LA English
CC 1-12 (Pharmacology)
AB In order to discover drugs that would ameliorate complications resulting from diabetes mellitus, Artemisia capillaris (Compositae) and Gnaphallium affine (Compositae) were studied and coumarins and flavonoids were isolated from these plants as possible active substances for inhibition of aldose reductase and platelet aggregation. Some coumarin and flavonoid compds. were investigated for structure-activity relationships on inhibitory effects for aldose reductase and platelet aggregation. Results of this study are presented.
ST natural product diabetes aldose reductase platelet
IT Glycosides
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(coumarin; naturally occurring substances for prevention of complications resulting from diabetes)
IT Allium
Angelica
Arctostaphylos uva-ursi
Arnebia euchroma
Artemisia capillaris
Cistanche
Corn
Diabetes mellitus
Eupatorium salvia
Ginger
Gnaphalium affine
Licorice (Glycyrrhiza)
Peanut (Arachis hypogaea)
Pepper (Piper nigrum)
Platelet aggregation inhibitors
Sanguisorba
Structure-activity relationship
Syneilesis aconitifolia
(naturally occurring substances for prevention of complications resulting from diabetes)
IT Natural products, pharmaceutical
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(naturally occurring substances for prevention of complications resulting from diabetes)
IT 92-61-5P, Scopoletin 93-35-6P, Umbelliferone 117-39-5P, Quercetin 118-34-3P, Eleutheroside B 120-08-1P, Scoparone 305-01-1P, Esculetin 486-21-5P, Isofraxidin 486-28-2P, Fraxinol 487-06-9P, 5,7-Dimethoxycoumarin ***491-70-3P*** , Luteolin 524-30-1P, Fraxin 531-59-9P, 7-Methoxycoumarin 531-75-9P, Esculin 569-92-6P, Rhamnocitrin 776-86-3P, Isoscopoletin 1076-38-6P, 4-Hydroxycoumarin 6601-62-3P, Cirsimaritin 10387-49-2P, 7-Acetoxycoumarin 14894-87-2P, 6,7-Diacetoxycoumarin 20280-81-3P, 4-Methoxycoumarin 32451-87-9P, Mandshurin 52077-36-8P 56365-38-9P, Capillarisin 56795-51-8P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(naturally occurring substances for prevention of complications resulting from ***diabetes***)

IT 9028-31-3, Aldose reductase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(naturally occurring substances for prevention of complications resulting from diabetes)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Hayman, S; JBiolChem 1965, V240, P877 MEDLINE
(2) Nishibe, S; Chem Pharm Bull 1990, V38, P1763 CAPLUS
(3) Okada, Y; Chem Pharm bull 1995, V43, P1385 CAPLUS
(4) Okada, Y; Natural Medicines 1994, V48(4), P324 CAPLUS
(5) Suekawa, M; Folia Pharmacol Jpn 1986, V88, P263 CAPLUS
(6) Tachibana, K; Natural Medicines 1995, V49(3), P266 CAPLUS
(7) Tsukamoto, H; Chem Pharm Bull 1985, V33, P4069 CAPLUS
(8) Yamaguchi, T; Wakan-iyaku-gakkaishi 1988, V5, P374 CAPLUS

=> s flavonoids (3a) diabet?

19977 FLAVONOIDS
83433 DIABET?
L20 9 FLAVONOIDS (3A) DIABET?

=> d l20 1- all

YOU HAVE REQUESTED DATA FROM 9 ANSWERS - CONTINUE? Y/(N):y

L20 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2002 ACS
AN 2000:19052 CAPLUS
DN 132:44949
TI The effect of flavonoid treatment on the glycation and antioxidant status in type 1 diabetic patients
AU Manuel y Keenoy, B.; Vertommen, J.; De Leeuw, I.
CS Laboratory of Endocrinology, University of Antwerp, Antwerp, B-2610, Belg.
SO Diabetes, Nutrition & Metabolism (1999), 12(4), 256-263
CODEN: DNMEEW; ISSN: 0394-3402
PB Editrice Kurtis s.r.l.
DT Journal
LA English
CC 1-12 (Pharmacology)
AB Amongst the numerous co-adjuvant therapies which could influence the incidence and progression of ***diabetic*** complications, antioxidants and ***flavonoids*** are currently being tested in several clin. trials. In this study we investigated the effects of Daflon 500, which is made up of the flavonoids diosmin (90%) and hesperidin (10%), in a group of 28 Type 1 diabetic patients in a double blind placebo-controlled study. Parameters of glycation and oxidative stress were measured before and after the intervention. Treatment with this flavonoid had no side effects and was followed by a decrease in HbA1c, from 8.85.+-.1.57 to 8.47.+-.1.40% (p=0.017). This decrease was more pronounced in the patients with higher initial HbA1c but was unrelated to glycemic control as monitored by the mean and fluctuations of daily glycemia. Decrease in HbA1c was accompanied by an increase in glutathione peroxidase activity, from 119.+-.68 to 145.+-.42 U/l hemolyzate (p=0.015), a tendency for increase in plasma protein thiols and an increase in the lag time of the copper-induced in vitro oxidizability of non-HDL lipoproteins, from 96.+-.24 to 111.+-.28 min (p=0.005). These parameters did not change significantly after receiving placebo. Other parameters of antioxidant capacity such as blood GSH, catalase and superoxide dismutase activities, as well as in vitro formation of thiobarbituric acid reactive substances (TBARS), were unaffected by either flavonoid or placebo. Our results suggest that the flavonoid-induced decrease in glycation is assocd. with an increase in the antioxidant component dependent on the levels and activities of thiol-contg. proteins such as glutathione peroxidase. One mechanism which could explain these effects is the

protection of vitamin C and E from consumption by oxidative processes.

ST flavonoid glycation antioxidant insulin dependent diabetes

IT Glycation
(effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

IT Flavonoids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

IT Thiols (organic), biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

IT Diabetes mellitus
(insulin-dependent; effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

IT Antioxidants
(pharmaceutical; effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

IT 50-99-7, D-Glucose, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(blood; effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

IT 520-26-3, Hesperidin 520-27-4, Diosmin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

IT 70-18-8, Reduced glutathione, biological studies 9001-05-2, Catalase 9013-66-5, Glutathione peroxidase 9054-89-1, Superoxide dismutase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effect of flavonoid treatment on glycation and antioxidant status in type 1 diabetic humans)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Baynes, J; Diabetes 1991, V40, P405 CAPLUS
(2) Beutler, E; Red Cell Metabolism: A Manual of Biochemical Methods 1975
(3) Brownlee, M; Diabetes 1994, V43, P836 CAPLUS
(4) Cohen, G; Anal Biochem 1970, V34, P30 CAPLUS
(5) Davie, S; Diabetes 1992, V41, P167 CAPLUS
(6) De Whalley, C; Biochem Pharmacol 1990, V39, P1743 CAPLUS
(7) Esterbauer, H; Am J Clin Nutr 1991, V53, P314S CAPLUS
(8) Hall, N; J Rheumatol 1982, V9, P593 MEDLINE
(9) Halliwell, B; BMJ 1983, V285, P296
(10) Hertog, M; Nutr Cancer 1994, V22, P175
(11) Jain, S; J Am Coll Nutr 1996, V15, P458 CAPLUS
(12) Kannel, W; JAMA 1979, V241, P2035 MEDLINE
(13) Knekt, P; BMJ 1996, V312, P478 CAPLUS
(14) Kuhnau, J; World Rev Nutr Diet 1976, V24, P117 MEDLINE
(15) Li, R; Free Rad Biol Med 1996, V21, P419 CAPLUS
(16) Longchampt, M; Arzneim Forsch/Drug Res 1989, V39, P882
(17) Lui, J; J Nutr 1998, V128, P116
(18) Lyons, T; Diabet Med 1991, V8, P411 MEDLINE
(19) McCance, D; J Clin Invest 1993, V91, P2470 CAPLUS
(20) Meyer, O; Phlebology 1992, Suppl 2, P64
(21) Miyata, T; Kidney Int 1997, V51, P1170 CAPLUS
(22) Morel, I; Method Enzymol 1994, V234, P437 MEDLINE
(23) Nooroozi, M; Med & Scient Section spring meeting 1998
(24) Odetti, P; Diabetes 1990, V39, P796 CAPLUS
(25) Paoletti, F; Anal Biochem 1986, V154, P536 CAPLUS
(26) Sinclair, A; Diabetologia 1991, V34, P171 MEDLINE
(27) Van Acker, S; Free Rad Biol Med 1996, V20, P333
(28) Vertommen, J; Phytother Res 1994, V8, P430 CAPLUS
(29) Zhang, A; Clin Chim Acta 1994, V227, P159 CAPLUS

L20 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2002 ACS
AN 1998:477906 CAPLUS
DN 129:122004
TI Protective effects of lemon flavonoids on oxidative stress in diabetic rats
AU Miyake, Yoshiaki; Yamamoto, Kanefumi; Tsujihara, Nobuko; Osawa, Toshihiko
CS Central Research Laboratory of Pokka Corporation, Ltd., Aichi, 481-8515, Japan
SO Lipids (1998), 33(7), 689-695
CODEN: LPDSAP; ISSN: 0024-4201
PB AOCS Press
DT Journal
LA English
CC 18-7 (Animal Nutrition)
AB The effects of lemon flavonoids, as crude flavonoids prepd. from lemon juice, were investigated in diabetic rats. The oxidative stress of eriocitrin (eriodictyol 7-O-.beta.-rutinoside) and hesperidin (hesperetin 7-O-.beta.-rutinoside) on streptozotocin-induced diabetic rats was investigated. Diabetic rats were given a diet which contained 0.2% crude flavonoids, 0.2% eriocitrin, and 0.2% hesperidin. After the 28-d feeding period, the concn. of the thiobarbituric acid- reactive substance in the serum, liver, and kidney of ***diabetic*** rats administered crude ***flavonoids*** , eriocitrin, and hesperidin significantly decreased as compared with that of the diabetic group. The levels of 8-hydroxydeoxyguanosine, which is exchanged from deoxyguanosine owing to oxidative stress, in the urine of diabetic rats administered eriocitrin and hesperidin significantly decreased as compared with that of the diabetic rat group. Crude flavonoids, eriocitrin, and hesperidin suppressed the oxidative stress in the diabetic rats. These results demonstrated that dietary lemon flavonoids of eriocitrin and hesperidin play a role as antioxidant in vivo.
ST lemon flavonoid oxidative stress diabetes
IT Diabetes mellitus
(diabetics as a model for long term effects of lipid peroxidn.)
IT Antioxidants
Appetite
Body weight
Lemon (Citrus limon)
Oxidative stress, biological
(dietary lemon flavonoids effect on oxidative stress in diabetics)
IT Flavonoids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(dietary lemon flavonoids effect on oxidative stress in diabetics)
IT 520-26-3, Hesperidin 13463-28-0, Eriocitrin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(dietary lemon flavonoids effect on oxidative stress in diabetics)

L20 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2002 ACS
AN 1997:584318 CAPLUS
DN 127:181134
TI Flavonoids as heat shock protein-60 inhibitor for therapeutic use
IN Morino, Masayoshi; Shiragami, Toshimi; Shobu, Yoichi; Yoshikumi, Chikao
PA Kureha Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A61K031-35
ICS A61K031-35; A61K031-70; C07D311-30; C07D311-32; C07D311-62; C07H017-065
CC 63-4 (Pharmaceuticals)
Section cross-reference(s): 1, 11
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09176010	A2	19970708	JP 1995-352016	19951227

AB Flavonoids extd. from Camellia sinensis as heat shock protein-60 [HSP-60; mol. wt. = 57-68 KD] inhibitor is useful for treating e.g. HSP-60-related type I diabetes and chronic rheumatism. In vitro expts. indicated that

quercetin inhibited the expression of HPS-60 in Hela cell S3 cultures.
ST tea flavonoid heat shock protein inhibitor; type I diabetes flavonoid tea; autoimmune disease flavonoid Camellia; chronic rheumatism flavonoid tea
IT Heat-shock proteins
RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(-60, inhibitor; flavonoids as heat shock protein-60 inhibitor for therapeutic use)
IT Rheumatic diseases
(chronic; flavonoids as heat shock protein-60 inhibitor for therapeutic use)
IT Autoimmune disease
(flavonoids as heat shock protein-60 inhibitor for therapeutic use)
IT Flavonoids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(flavonoids as heat shock protein-60 inhibitor for therapeutic use)
IT Tea (Camellia sinensis)
(flavonoids as heat shock protein-60 inhibitor from tea for therapeutic use)
IT ***Diabetes*** mellitus
(insulin-dependent; ***flavonoids*** as heat shock protein-60 inhibitor for therapeutic use)
IT 117-39-5P, Quercetine 153-18-4P, Rutin 154-23-4P, (+)-Catechin 491-67-8P, Baicalein
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(flavonoids as heat shock protein-60 inhibitor for therapeutic use)

L20 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2002 ACS
AN 1988:542381 CAPLUS
DN 109:142381
TI Effect of four flavonoids on blood glucose of rats
AU Ammar, Nagwa M.; Al-Okbi, Sahar Y.
CS Pharm. Sci. Lab., Natl. Res. Cent., Cairo, Egypt
SO Arch. Pharmacal Res. (1988), 11(2), 166-8
CODEN: APHRDQ; ISSN: 0253-6269
DT Journal
LA English
CC 1-10 (Pharmacology)
AB The effects of the aglycons morin and quercetin and their corresponding glycosides quercitrin and rutin were studied on the blood glucose levels of rats. Quercetin and quercetrin caused hypoglycemia in rats, while rutin and morin had almost no effect. Quercetin, which caused pronounced (50%) hypoglycemic effect, reduced the blood glucose level of alloxan diabetic rats.
ST flavonoid blood glucose
IT Antidiabetics and Hypoglycemics
(flavonoids as)
IT ***Flavonoids***
RL: BIOL (Biological study)
(hypoglycemia from, in ***diabetes*** mellitus)
IT 117-39-5, Quercetin 153-18-4, Rutin 480-16-0, Morin 522-12-3, Quercitrin
RL: BIOL (Biological study)
(hypoglycemia from, in diabetes mellitus)

L20 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2002 ACS
AN 1987:61044 CAPLUS
DN 106:61044
TI Inhibition of aldose reductase from rat lens by flavonoids
AU Xie, Mingzhi; Shen, Zhufang
CS Inst. Mater. Med., Chin. Acad. Med. Sci., Beijing, Peop. Rep. China
SO Yaoxue Xuebao (1986), 21(10), 721-4
CODEN: YHHPAL; ISSN: 0513-4870
DT Journal
LA Chinese
CC 1-10 (Pharmacology)

Section cross-reference(s): 7

AB Thirty two flavonoid compds. were screened for inhibition of rat lens aldose reductase [9028-31-3] activity, among which baicalein [491-67-8] and isohyperoside acetate were found to exhibit marked enzyme-inhibitory activities with IC50 values of 3.5 .times. 10-6 and 2.2 .times. 10-6M, resp. Baicalein displayed a mixed noncompetitive and competitive inhibition, while isohyperoside acetate showed a mixed noncompetitive and uncompetitive type of inhibition. Increased aldose reductase activity has been implicated in pathogenesis of diabetic complications so that treatment of these diabetic complications with aldose reductase inhibitors may be a valid approach.

ST flavonoid aldose reductase inhibition diabetes

IT Flavonoids
RL: BIOL (Biological study)
(aldose reductase inhibition by)

IT Kinetics, enzymic
(of inhibition, of aldose reductase, by flavonoids)

IT ***Diabetes*** mellitus
(treatment of, ***flavonoids*** inhibition of aldose reductase in relation to)

IT 480-11-5, Oroxylin-A 480-41-1, Naringenin 480-44-4, Acacetin 482-36-0 489-38-3, Matteucinol 489-38-3D, glycoside deriv. 491-67-8 491-70-3, Luteolin 520-32-1, Tricin 528-48-3 1447-88-7, Hispidulin 2328-13-4 5373-11-5 10236-47-2, Naringin 18085-97-7 21967-41-9, Baicalin 22368-21-4, Eupatilin 24211-30-1, Farrerol 27567-66-4 51059-44-0, Wogonoside 58749-22-7 65549-68-0, Isohyperoside 65549-68-0D, acetylated 67047-05-6 68592-14-3 73489-99-3 106441-31-0 106442-17-5
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(aldose reductase-inhibitory activity of)

IT 9028-31-3, Aldose reductase
RL: BIOL (Biological study)
(inhibition of, by ***flavonoids*** , ***diabetes*** treatment in relation to)

L20 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2002 ACS

AN 1986:417646 CAPLUS

DN 105:17646

TI Inhibition of aldose reductase by ***flavonoids*** : possible attenuation of ***diabetic*** complications

AU Varma, Shambhu D.

CS Sch. Med., Univ. Maryland, Baltimore, MD, 21201, USA

SO Prog. Clin. Biol. Res. (1986), 213(Plant Flavonoids Biol. Med.), 343-58
CODEN: PCBRD2; ISSN: 0361-7742

DT Journal; General Review

LA English

CC 1-0 (Pharmacology)

AB A review with 15 refs. on the inhibition of aldose reductase [9028-31-3] by flavonoids in relation to the treatment of possible diabetic complications.

ST review flavonoid aldose reductase diabetes

IT Flavonoids
RL: BIOL (Biological study)
(aldose reductase inhibition by, diabetes complication treatment in relation to)

IT Diabetes mellitus
(treatment of complications in, aldose reductase inhibition by flavonoids in relation to)

IT 9028-31-3
RL: BIOL (Biological study)
(inhibition of, by ***flavonoids*** , ***diabetic*** complications treatment in relation to)

L20 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2002 ACS

AN 1983:83231 CAPLUS

DN 98:83231

TI Inhibition of aldose reductases from rat and bovine lenses by flavonoids

AU Okuda, Jun; Miwa, Ichitomo; Inagaki, Kazuhiro; Horie, Tokunaru; Nakayama, Mitsuru

CS Fac. Pharm., Meijo Univ., Nagoya, 468, Japan

SO Biochem. Pharmacol. (1982), 31(23), 3807-22
CODEN: BCPCA6; ISSN: 0006-2952
DT Journal
LA English
CC 1-3 (Pharmacology)
GI

/ Structure 2 in file .gra /

AB Thirty flavones, 4 isoflavones, and 13 coumarins were tested as inhibitors of lens aldose reductase [9028-31-3] which appears to initiate cataract formation in diabetes. Many were found to be potent inhibitors. The 2 most potent ones were axillarin (I) [5188-73-8] and 6,3',4'-trihydroxy-5,7,8-trimethoxyflavone (LARI 1) [84632-09-7]. These 2 flavones inhibited aldose reductase purified from rat lens with IC50 values of 2.6 .times. 10-8 and 3.6 .times. 10-8M, resp. They also inhibited aldose reductase purified from bovine lens with IC50 values of 1.8 .times. 10-7M. Inhibition of rat and bovine lens aldose reductases by the 2 compds. was of a non-competitive type with DL-glyceraldehyde as the variable substrate. Some flavone including axillarin and LARI 1 were poor inhibitors against several adenine nucleotide-requiring enzymes, which are involved in glycolysis and other metabolic reactions. Thus, these 2 drugs may be useful drugs for diabetic patients. All the potent inhibitors of the compds. tested had a flavone skeleton, one (or 2 free) hydroxyl(s) in ring C, and >3 hydroxyls (free or methylated) in ring A. The possible relationships of structures to inhibitory potencies of the compds. tested are discussed.
ST aldose reductase eye flavonoid inhibition; flavone isoflavone coumarin aldose reductase; structure activity flavonoid; cataract diabetes aldose reductase inhibitor
IT Enzymes
RL: BIOL (Biological study)
(adenine nucleotide-requiring, flavones effect on)
IT Flavones
RL: BIOL (Biological study)
(aldose reductase of eye inhibition by, structure in relation to)
IT Diabetes mellitus
(cataract in, aldose reductase inhibition by flavonoids in relation to)
IT Cataract
(in ***diabetes*** , ***flavonoids*** inhibition of aldose reductase in relation to)
IT Molecular structure-biological activity relationship
(aldose reductase-inhibiting, of flavonoids)
IT Flavones
RL: BIOL (Biological study)
(iso-, aldose reductase of eye inhibition by, structure in relation to)
IT 91-64-5D, derivs. 522-12-3 939-19-5 2555-24-0 2555-28-4
3450-77-9 3888-94-6 4281-28-1 4323-80-2 4439-69-4 5188-73-8
6601-62-3 10176-66-6 13020-19-4 14965-20-9 14991-61-8 15071-04-2
16520-78-8 16545-23-6 29076-76-4 34334-69-5 34810-62-3
36950-98-8 41087-97-2 41087-98-3 41365-32-6 56003-01-1
70575-17-6 70575-23-4 73428-16-7 75187-55-2 76585-08-5
76844-60-5 76844-61-6 76844-62-7 76844-65-0 76844-66-1
76844-67-2 76844-70-7 76844-71-8 76844-72-9 84632-09-7
84632-10-0 84632-11-1 84632-12-2 84632-13-3 84632-14-4
84632-15-5 84632-16-6
RL: BIOL (Biological study)
(aldose reductase of eye inhibition by, structure in relation to)
IT 9001-40-5 9001-48-3 9001-51-8 9001-59-6 9001-60-9 9028-86-8
9031-72-5
RL: BIOL (Biological study)
(flavones effect on)
IT 9028-31-3
RL: BIOL (Biological study)
(inhibition of, of eye, by flavonoids, cataract inhibition and structure in relation to)

L20 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2002 ACS
AN 1977:69563 CAPLUS

DN 86:69563
TI ***Diabetic*** cataracts and ***flavonoids***
AU Varma, S. D.; Mizuno, A.; Kinoshita, J. H.
CS Lab. Vision Res., Natl. Eye Inst., Bethesda, Md., USA
SO Science (1977), 195(4274), 205-6
CODEN: SCIEAS
DT Journal
LA English
CC 14-3 (Mammalian Pathological Biochemistry)
AB Oral administration of quercitrin, an inhibitor of aldose reductase, significantly decreased the accumulation of sorbitol in the lens of diabetic Octodon degus. The onset of cataract was effectively delayed when quercitrin was continuosuly administered. Thus in these diabetic animals, as in galactosemic rats, the use of an effective aldose reductase inhibitor impedes the course of cataract development. In diabetes, as in galactosemia, aldose reductase probably plays a key role in initiating the formation of lens opacity.
ST aldose reductase quercitrin cataract diabetes; flavonoid cataract diabetes
IT Diabetes mellitus
(cataracts in, quercitrin effect on, aldose reductase in relation to)
IT Cataract
(in diabetes, quercitrin effect on, aldose reductase in relation to)
IT 522-12-3
RL: BIOL (Biological study)
(diabetic cataract response to, aldose reductase in relation to)
IT 9028-31-3
RL: BIOL (Biological study)
(in diabetic cataract)
IT 50-70-4, biological studies 57-48-7, biological studies
RL: BIOL (Biological study)
(of diabetic cataract, quercitrin effect on, aldose reductase in relation to)

L20 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2002 ACS
AN 1977:28695 CAPLUS
DN 86:28695
TI Ascorbic acid and diabetes mellitus
AU Clemetson, C. Alan B.
CS Methodist Hosp., Brooklyn, N. Y., USA
SO Med. Hypotheses (1976), 2(5), 193-4
CODEN: MEHYDY
DT Journal
LA English
CC 18-2 (Animal Nutrition)
Section cross-reference(s): 1
AB A discussion. Dehydroascorbic acid [490-83-5], the oxidized form of vitamin C [50-81-7], causes diabetes when injected into animals and has been reported to be present in increased amts. in the blood of patients with diabetes mellitus and even in prediabetics. One of the earliest changes in diabetes mellitus is electron-microscopic evidence of damage to the inner endothelial lining of the blood vessels. Certain bioflavonoids, which are natural non-toxic food substances from plants, like rutin from buckwheat, prevent the oxidn. of ascorbic acid and seem to protect the endothelium when given with vitamin C; it is therefore suggested that all vitamin C tablets should be combined with these flavonoids.
ST vitamin C flavonoid; dehydroascorbate diabetes mellitus
IT Diabetes mellitus
(from dehydroascorbic acid, flavonoid protection from)
IT Flavonoids
RL: BIOL (Biological study)
(in ascorbic acid therapy)
IT 490-83-5
RL: BIOL (Biological study)
(***diabetes*** mellitus from, ***flavonoids*** protection from)
IT 50-81-7, biological studies
RL: BIOL (Biological study)
(flavonoids in relation to therapy with)

=> index bioscience napralert

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FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
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                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                    -6.20     -11.78

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       BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
       CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
       DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...'
ENTERED AT 16:07:19 ON 29 AUG 2002

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=> s brickellia californica (4a) (anal? or quantif? or evaluat? or hplc?)

   9 FILES SEARCHED...
  14 FILES SEARCHED...
  29 FILES SEARCHED...
  37 FILES SEARCHED...
  46 FILES SEARCHED...
  50 FILES SEARCHED...
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u
=> s brickellia californica (8a) (anal? or quantif? or evaluat? or hplc?)

  10 FILES SEARCHED...
  15 FILES SEARCHED...
  32 FILES SEARCHED...
  42 FILES SEARCHED...
  49 FILES SEARCHED...
  50 FILES SEARCHED...
<------User Break------>
u

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END
u
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LOGOFF? (Y)/N/HOLD:y

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    11.66     190.56

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
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CA SUBSCRIBER PRICE                                     0.00     -11.78

STN INTERNATIONAL LOGOFF AT 16:20:23 ON 29 AUG 2002



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 NEWS  3  Apr 09  BEILSTEIN: Reload and Implementation of a New Subject Area
 NEWS  4  Apr 09  ZDB will be removed from STN
 NEWS  5  Apr 19  US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
 NEWS  6  Apr 22  Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
 NEWS  7  Apr 22  BIOSIS Gene Names now available in TOXCENTER
 NEWS  8  Apr 22  Federal Research in Progress (FEDRIP) now available
 NEWS  9  Jun 03  New e-mail delivery for search results now available
 NEWS 10  Jun 10  MEDLINE Reload
 NEWS 11  Jun 10  PCTFULL has been reloaded
 NEWS 12  Jul 02  FOREGE no longer contains STANDARDS file segment
 NEWS 13  Jul 22  USAN to be reloaded July 28, 2002;
                  saved answer sets no longer valid
 NEWS 14  Jul 29  Enhanced polymer searching in REGISTRY
 NEWS 15  Jul 30  NETFIRST to be removed from STN
 NEWS 16  Aug 08  CANCERLIT reload
 NEWS 17  Aug 08  PHARMAMarketLetter(PHARMAML) - new on STN
 NEWS 18  Aug 08  NTIS has been reloaded and enhanced
 NEWS 19  Aug 19  Aquatic Toxicity Information Retrieval (AQUIRE)
                  now available on STN
 NEWS 20  Aug 19  IFIPAT, IFICDB, and IFIUDB have been reloaded
 NEWS 21  Aug 19  The MEDLINE file segment of TOXCENTER has been reloaded
 NEWS 22  Aug 26  Sequence searching in REGISTRY enhanced
 NEWS 23  Sep 03  JAPIO has been reloaded and enhanced

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               CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
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=> index bioscience napralert

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FULL ESTIMATED COST                                     0.21       0.21

INDEX 'ADISALERTS, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
       BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
       CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
       DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...'
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=> s luteolin (4a) ((blood (3a) glucose) or (hyperglycem?))
<------User Break------>
u
=> s luteolin? (4a) ((blood (3a) glucose) or (hyperglycem?))

          2   FILE CAPLUS
  33 FILES SEARCHED...
          1   FILE USPATFULL
  62 FILES SEARCHED...

   2 FILES HAVE ONE OR MORE ANSWERS,   64 FILES SEARCHED IN STNINDEX

L1   QUE LUTEOLIN? (4A) ((BLOOD (3A) GLUCOSE) OR (HYPERGLYCEM?))

=> d rank

F1           2   CAPLUS
F2           1   USPATFULL


=> fil f1-f2

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       3.18       3.39

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=> s l1

L2           3 L1

=> dup rem l2

PROCESSING COMPLETED FOR L2
L3            3 DUP REM L2 (0 DUPLICATES REMOVED)

=> d l3 1- ti,bib,abs

YOU HAVE REQUESTED DATA FROM 3 ANSWERS - CONTINUE? Y/(N):y


L3   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2002 ACS
TI   Therapeutic diets, antihyperglycemics, and amylase inhibitors containing
     olive leaves or luteolins
AN   2002:36455  CAPLUS
DN   136:69261
TI   Therapeutic diets, antihyperglycemics, and amylase inhibitors containing
     olive leaves or luteolins
IN   Komaki, Eriko; Maru, Yuji; Ota, Yasuhiro; Tsukada, Yoji
PA   Marukin Chuyu Co., Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 7 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.       KIND  DATE          APPLICATION NO.  DATE
     ---------------  ----  --------      ---------------  --------
PI   JP 2002010753     A2   20020115      JP 2001-125900   20010424
PRAI JP 2000-122461    A    20000424
AB   Title diets and agents contain olive leaves, their exts., luteolin, or its
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derivs. An EtOH ext. of olive leaf in vitro inhibited human salivary or pancreatic amylase with IC50 of 4.0 or 0.02 mg/mL, resp. The ext. was administered to hyperglycemic patients to lower their blood sugar level.

L3 ANSWER 2 OF 3 USPATFULL
TI Compositions and methods for treatment of diabetes
AN 2002:133846 USPATFULL
TI Compositions and methods for treatment of diabetes
IN Ziegler, Randy H., Costa Mesa, CA, UNITED STATES
PI US 2002068704 A1 20020606
AI US 2001-967030 A1 20010927 (9)
RLI Continuation-in-part of Ser. No. WO 2000-US8957, filed on 4 Apr 2000, UNKNOWN
PRAI US 1999-127824P 19990405 (60)
DT Utility
FS APPLICATION
LREP CROSBY HEAFEY ROACH & MAY, 1901 AVENUE OF THE STARS, SUITE 700, LOS ANGELES, CA, 90067
CLMN Number of Claims: 17
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 825
AB Flavonoids, especially luteolin, are shown to be effective against insulin dependent (Type I) and insulin independent (Type II) diabetes mellitus. It is demonstrated that luteolin works in mammals by binding and blocking the K.sub.v1.3 potassium channel of T-cell and Beta cells. Antidiabetic and anti-autoimmune compounds can be selected by measuring their ability to bind to and block the K.sub.v1.3 channel.

L3 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI Effects of luteolin 5-O-.beta.-rutinoside in streptozotocin-induced diabetic rats
AN 1996:322603 CAPLUS
DN 125:75991
TI Effects of luteolin 5-O-.beta.-rutinoside in streptozotocin-induced diabetic rats
AU Zarzuelo, A.; Jimenez, I.; Gamez, M. J.; Utrilla, P.; Fernadez, I.; Torres, M. I.; Osuna, I.
CS Dep. Farmacologia, Univ. Granada, Granada, 18071, Spain
SO Life Sciences (1996), 58(25), 2311-2316
CODEN: LIFSAK; ISSN: 0024-3205
PB Elsevier
DT Journal
LA English
AB We have investigated the antidiabetic activity of luteolin 5-rutinoside in streptozotocin(STZ)-induced diabetic rats. Treatment for 20 days with 2 mg/kg increased both pancreatic insulin and DNA content. When both luteolin 5-rutinoside (2 mg/kg) and glibenclamide (1 mg/kg) were administered concurrently to STZ-diabetic rats, a marked antidiabetic activity was achieved. This effect was evidenced by a significant decrease in glycemia levels (>50%), a 2.5-fold increase in insulin blood levels and an increase in body and pancreas wt., compared to the diabetic control group.

=>

---Logging off of STN---

=>
Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	14.35	17.74

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-1.24	-1.24

STN INTERNATIONAL LOGOFF AT 14:21:30 ON 04 SEP 2002